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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,697	03/09/2006	Enrique V. Barrera	11321-P061WOUS	1893

7590 03/23/2009  
Winstead Sechrest & Minick  
PO Box 50784  
Dallas, TX 75201

EXAMINER
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VANORE, DAVID A

ART UNIT	PAPER NUMBER
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2881

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03/23/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/542,697	<b>Applicant(s)</b> BARRERA ET AL.	
	<b>Examiner</b> DAVID A. VANORE	<b>Art Unit</b> 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 and 62 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-25 is/are allowed.
- 6) ☒ Claim(s) 1-17 and 62 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-17, and 62 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Dharap et al. ("Nanotube film based on single-wall carbon nanotubes for strain sensing").

3. Regarding claim 1, Dharap et al. teaches a device consisting of a carbon nanotube film ("Nanosensor" in Fig. 3) is attached to a specimen whose strain is to be measured and coupled to an electrical probe (Four point probe in Col. 2 at page 380) which measures an electrical property of the film.

4. Regarding claim 3, as pointed out above the electrical probe is a four point probe.

5. Regarding claim 4, Dharap et al. at Col. 2 on page 380, recites that the electrical measurement of strain is resistance based, therefore the property measures is resistance.

6. Regarding claim 5, the mechanical condition measured is strain, note page 380 again.

7. Regarding claim 6, the carbon nanotubes are single walled carbon nanotubes (SWCNT's), note page 380, column 1.

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8. Regarding claim 7, the carbon nanotubes of Dharap et al. are processed with DMF, physically filtered, dried, and peeled from a film to produce a homogeneity in tube length of about 10 micrometers. (Page 380, Col. 1-2).
9. Regarding claims 8 and 62, the reaction of the SWCNT's with DMF, along with the filtering, drying, and bonding to PVC with an epoxy comprises modification by at least solvation.
10. Regarding claim 9, Dharap et al. recites the carbon nanotubes are implemented as buckypaper.
11. Regarding claim 10, the nanotubes are incorporated into an epoxy matrix.
12. Regarding claim 11, the nanotube film is attached to a PVC material (Col. 2, page 380).
13. Regarding claims 12-15, Dharap et al. concludes that the strain sensor discussed would have application as a strain sensor at the macro scale being incorporated in a structural element where a Raman spectroscopy based sensor would not be feasible, such as an aircraft wing.
14. Regarding claim 16-17, the nanotube film consists of a three dimensional, nearly flat array attached to a material under test, Note Fig. 2. A three dimensional array encompasses a two dimensional array.

***Claim Rejections - 35 USC § 101***

15. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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Claim 2 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 2 recites a database, which is a data structure, without a corresponding tangible medium in which the data structure is housed. The claim also recites that the database correlates a measured electrical property to mechanical conditions. This would be articulated by a processor running a set of instructions also encoded in a computer readable medium. The claim as written does not contain these structural features linking the data structures to provoke change in the device, and therefore the claim is rejected.

***Allowable Subject Matter***

16. Claims 18-25 allowed and the reasons for their allowance is maintained.

***Response to Arguments***

17. Applicant's arguments with respect to claims 1-2, 4-6, 9, 11-12, and 16-17 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID A. VANORE whose telephone number is (571)272-2483. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David A Vanore/  
Primary Examiner, Art Unit 2881